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10/715,032	11/17/2003	Todd R. Newman	16-561	2769

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WATTS, HOFFMANN CO., L.P.A.  
Ste. 1750  
1100 Superior Ave.  
Cleveland, OH 44114

EXAMINER
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JACKSON, ANDRE K

ART UNIT	PAPER NUMBER
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2856

DATE MAILED: 05/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/715,032

Applicant(s)

NEWMAN ET AL.

Examiner

André K. Jackson

Art Unit

2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 February 2005.  
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5, 7-9, 12-17, 21-25, 28, 29 and 31-36 is/are pending in the application.  
4a) Of the above claim(s) 4, 6, 10, 11, 18-20, 26, 27, 30 and 37-41 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-3, 5, 7-9, 12-17, 24, 28, 29 and 31-36 is/are rejected.  
7) ☒ Claim(s) 21-23 and 25 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of the species in the reply filed on 02/15/04 is acknowledged. The traversal is on the ground(s) that there is no burden to the Examiner. This is not found persuasive because: with regard to the "no burden" argument, it is noted that each distinct invention beyond one is a burden in that it draws the attention of the Examiner to its own requirements. Examination requires focus to follow search leads and patterns of logic in formulating applications of the prior art to that, which is claimed. For instance, in the present case, there would have to be a search in one area for a permanent magnet in combination with the remaining limitations of the independent claim and then another separate search in a different area for an electromagnet in combination with the remaining limitations of the independent claim; also the search for a magnetic flux sensor that changes position relative to the flux sensor is different than the search for a magnetic flux sensor that changes position relative to the magnetic field. When the Examiner has to pursue several search patterns of logic simultaneously or serially, added burden is presented. In order to examine several inventions and/or species simultaneously or serially, added effort beyond that necessary for one

invention or species must be expended. Where the effort is serial and the jobs are different the added burden is obvious.

The requirement is still deemed proper and is therefore made FINAL.

Initially the Applicant elected species 4, claim 15. The Examiner phoned the Applicant's representative because the Applicant was entitled to more claims to be examined. On April 26, 2005 John A. Yirga informed the Examiner that claims 3, 5, 12, 15, 25, 29 and 34 are also included in the election.

2. Claims 19, 20, 38 and 39 are withdrawn from consideration.

Regarding claims 19 and 20 these claims are similar to non-elected claim 18 in which the base includes a stainless steel housing which is different from the encapsulant for isolating the electronics.

Regarding claims 38 and 39, these claims depend from non-elected claim 37.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 7,13 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
5. Claim 7 recites the limitation "float arm" in line 1 of the claim. There is insufficient antecedent basis for this limitation in the claim.
6. Claim 14 recites the limitation "the float arm" in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim.
7. Claim 13 recites the limitation "the lead frame" in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1,3,5,7-9,12,15,17,24,29,33,34 and 36 are rejected under 35 U.S.C. 102(b) as being anticipated by Patel.

Regarding claim 1, Patel discloses in the patent entitled "Telecommunication system for remote LP gas inventory control" a base fixed relative to the container; a movable member supported by the base for relative positioning with respect to the base; a float member that moves

relative to the base as the level of fluid in a container changes; an arm attached to the movable member and float member where the position of the float is translated into movement of the moveable member with respect to the base; at least one magnetic flux sensor coupled to one of the moveable member or base that is capable of creating an electrical output signal in response to a change in magnetic flux density; and f) at least one magnet disposed proximate the magnetic flux sensor coupled to one of the moveable member or base for providing a magnetic field to induce a change in electrical output response from the magnetic flux sensor as the float member moves with changes in fluid level (Figures 3,4,11,13 and Column 4, lines 30-50).

Regarding claim 3, Patel discloses where the magnetic field is provided using an electromagnet (29).

Regarding claim 5, Patel discloses where the magnetic flux sensor remains stationary while the magnetic field changes position relative to the magnetic flux sensor (Column 4, lines30-50).

Regarding claim 7, Patel discloses where the float and float arm are attached to the movable member (Figure 3).

Regarding claim 8, Patel discloses where the base has an integral mounting feature so that the fluid level sensor can be mounted to and positively located on a fuel pump module, other fuel system, mounting feature or other mounting feature within a fluid container (Figures 2,3).

Regarding claim 9, Patel discloses where the base or movable member has integral features for positively positioning the magnetic flux sensor (Figures 2,3).

Regarding claim 12, Patel discloses where the base has an integral electrical connector block for making electrical connections to the sensor electronics (Figures 2-4).

Regarding claim 15, Patel discloses where the base includes an encapsulant for isolating the electronics from harsh fluids found in liquid fuels (31,32).

Regarding claim 17, Patel discloses where the encapsulant maintains positive positioning of the magnetic flux sensor (Figure 4).

Regarding claim 24, Patel additionally including a lead frame provides an electrical path to other optional circuitry (Figure 4).

Regarding claim 29, Patel discloses where a pivoting float maintains similar orientation to the fluid surface throughout the range of float arm travel (Figures 2,3).

Regarding claim 33, Patel discloses fixing a base relative to the container; coupling a movable member to the base for relative positioning with respect to the base; providing a float member that moves up and down with the level of fluid in a container changes; attaching the float member to the moveable member by means of an arm attached to the moveable member and float member wherein the position of the float is

translated into movement of the moveable member with respect to the base; coupling a magnetic flux sensor to one of the moveable member or base that is capable of creating an electrical output signal in response to a change in magnetic flux density; and positioning at least one magnet disposed proximate the magnetic flux sensor coupled to one of the moveable member or base for providing a magnetic field to induce a change in electrical output response from the magnetic flux sensor as the float member moves up and down with changes in fluid level (Figures 3,4,11,13 and Column 4, lines 30-50).

Regarding claim 34, Patel discloses where the base includes an encapsulant for isolating the electronics from harsh fluids found in liquid fuels (31,32).

Regarding claim 36, Patel discloses where the encapsulant maintains positive positioning of the magnetic flux sensor (Figure 4).

### ***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.



11. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Patel in view of Lorenzen.

12. Regarding claim 2, Patel discloses where the at least one magnetic flux sensor element includes a programmable linear ratiometric Hall effect integrated circuit having programmable gain and offset voltage. Patel does not disclose where the sensor has temperature compensation. However, Lorenzen discloses in the patent entitled "Angular position sensor" where the sensor has temperature compensation (Column 8, lines 34-35). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Patel to include where the sensor has temperature compensation. By adding this feature the apparatus would be able to achieve a nearly constant output of the sensor, as a function of sensed magnetic flux or sensed physical position, despite changes in temperature.

13. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Patel in view of Swindler.

Regarding claim 14, Patel does not disclose where the base has a first travel stop to prevent the float arm from exceeding maximum upward travel and a second travel stop to prevent the float arm from exceeding maximum downward travel. However, Swindler et al. disclose in the patent entitled "Liquid level gauge" where the base has a first travel stop to prevent the float arm from exceeding maximum upward travel and a

second travel stop to prevent the float arm from exceeding maximum downward travel (Column 11, lines 55-62). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Patel to include where the base has a first travel stop to prevent the float arm from exceeding maximum upward travel and a second travel stop to prevent the float arm from exceeding maximum downward travel. By adding this feature the apparatus would be able to prevent the arm from going beyond its normal working range.

14. Claims 16 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Patel in view of Duesler et al.

Regarding claim 16, Patel does not disclose where the encapsulant protects the electronics by dampening mechanical vibration and shock. However, Duesler et al. disclose in the patent entitled "Magnetic position sensor having opposed tapered magnets" where the encapsulant protects the electronics by dampening mechanical vibration and shock (Column 1, line 50). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Patel to include where the encapsulant protects the electronics by dampening mechanical vibration and shock. By adding this feature the apparatus would be able to accurately determine the liquid level for an extended period of time since the encapsulant would increase the life of the electronics.

Regarding claim 35, Patel does not disclose where the encapsulant protects the electronics by dampening mechanical vibration and shock. However, Duesler et al. disclose where the encapsulant protects the electronics by dampening mechanical vibration and shock (Column 1, line 50). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Patel to include where the encapsulant protects the electronics by dampening mechanical vibration and shock. By adding this feature the apparatus would be able to accurately determine the liquid level for an extended period of time since the encapsulant would increase the life of the electronics.

15. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Patel in view of Andersen.

16. Regarding claim 28, Patel does not disclose where the float arm comprises a yoke that attaches symmetrically to the float to reduce cantilevering in the float arm. However, Andersen discloses in the patent entitled "Instrument deflection modifier" where the float arm comprises a yoke that attaches symmetrically to the float to reduce cantilevering in the float arm (Figure 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Patel to include where the float arm comprises a yoke that attaches symmetrically to the float to reduce cantilevering in the float arm. By

adding this feature the apparatus would be able to accurately determine the level of the liquid.

17. Claim 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Patel in view of Clark et al.

Regarding claim 31, Patel does not disclose where a float geometry defines a float thickness that is less than a width dimension of generally flat float top and bottom surfaces to enhance float buoyancy for low fluid level detection. However, Clark et al. disclose in the patent entitled "Device for gauging, metering or measuring liquids" where a float geometry defines a float thickness that is less than a width dimension of generally flat float top and bottom surfaces to enhance float buoyancy for low fluid level detection (Figures 1,2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Patel to include where a float geometry defines a float thickness that is less than a width dimension of generally flat float top and bottom surfaces to enhance float buoyancy for low fluid level detection. By adding this feature the apparatus would be able to maximize the buoyancy of the float.

Regarding claim 32, Patel does not disclose where the float thickness is less than either a width or length dimension of a generally rectangular float top and bottom surfaces to enhance float buoyancy for low fluid level detection. However, Clark et al. disclose where the float

thickness is less than either a width or length dimension of a generally rectangular float top and bottom surfaces to enhance float buoyancy for low fluid level detection (Figures 1,2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Patel to include where the float thickness is less than either a width or length dimension of a generally rectangular float top and bottom surfaces to enhance float buoyancy for low fluid level detection. By adding this feature the apparatus would be able to maximize the buoyancy of the float.

18. Claims 21-23 and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to André K. Jackson whose telephone number is (571) 272-2196. The examiner can normally be reached on Mon.-Thurs. 7AM-4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2856

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A.J.



May 13, 2005



HEZRON WILLIAMS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800